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Effect of NEP 2020 on selected physical fitness components and academic performance of students

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Abstract
In this investigation, the authors focused on how systematic engagement of a child in structured physical activity improved their fitness and academic performance. NEP-2020 is a new education policy introduced by the government of India and it places good emphasis on holistic education including Physical Education. This research was conducted to examine the impact of NEP-2020 on two selected fitness variables namely flexibility and strength. To measure the academic performance, academic assessment reports of the selected students were collected and compared with the fitness test. The results established that there was a significant level of improvement in the academic performance of students, who were engaged in physical activity as mandated by NEP 2020.

Keywords: Fitness, childhood obesity, holistic education

Introduction
India is suffering from the serious problem of childhood physical inactivity. However, schools offer a unique environment to influence children's physical activity levels positively. Giving enough time for school children to engage in meaningful physical activities in school has become very difficult due to the extreme pressure on the children, parents, and school administrators to deliver the highest academic performance year after year. Moreover, there exists a perception that if a child spends their time on nonacademic activities, it will seriously affect his or her academic performance. Many studies have proved meaningful engagement in physical activities, not necessarily competitive sports, does not harm academic performance. Further, the National Education Policy 2020 emphasizes the holistic development of students, and physical education plays a key role in that. The NEP 2020 strengthens the role of physical education which focuses on a holistic and multidisciplinary approach, integration from early years, choice-based curriculum, and inclusion of sports assessments, training, and infrastructure. It mentions that physical education is considered equally important as academic subjects. Sports, yoga, and fitness activities are encouraged to be a regular part of the school timetable. Health-related physical fitness components are an important part of our daily life in that way flexibility and muscular strength were infused in the study for assessments and analysis. Flexibility is the range of movement around the joints and muscular strength is exerting the force in a single repetition Inculcating the two selected fitness variables, this study was designed to assess and analyze, if the improvement in flexibility and strength enhances the academic performance of the students.

Method
The present study is an attempt to find out the relationship between physical fitness and academic performance in respect of the NEP2020 among school children of senior secondary level. The researcher selected ten male students of the age group between fifteen to seventeen years for this study. Since the study was a pilot study to understand the implementation of NEP 2020, only the male gender was selected as per convenience. The selected students participated in regular physical activity every day during their physical education periods. In the study selected male students were examined with the Sit and Reach Test for Lower Body Flexibility and Push Up for Upper Body Strength as per Khelo India Fitness Assessment tests. The physical education period in the school was for a one-hour duration every day for six days a week during the school working hours. The students did not engage in any other regular sports activity. The physical activities engaged by the students were planned according to the guidelines suggested in NEP 2020. Khelo India Fitness Test was conducted to assess the fitness level of the participants in the two selected variables for lower body flexibility and upper body strength. The test was designed to be sustained for two terms, The Pretest was conducted in July and Post post-test was conducted in December after

the period of the training program. To measure the participant's academic performance their academic results for two terms namely Term 1 and Term 2 were recorded and analyzed. The grades were collected from the school's regular academic assessments of different subjects. Many studies have been conducted on the relationship between physical activity and academic performance, however, very negligible research has been done based on the NEP 2020 and no such study was conducted in Pondicherry state on this topic. The researchers also had several meetings with the stakeholders such as the school principal and teaching staff and also marked the importance of implementation of the New Education Policy. All the necessary permissions to record the academic performance of the participants were sought and received by the investigator. The selected variables namely Flexibility, strength, and academic performance were analyzed diligently by the authors before and after the results. The academic assessments were as prescribed by the Central Board of Secondary Education. The dependent variables for the study were academic performance, flexibility, and strength and the independent variable was the physical education program as suggested in the NEP 2020 guidelines.

Results and Discussion

The objective of the study was to find out if there was significant relation between Physical activity and Academic performance based on NEP2020 guidelines. The data on Academic performance were obtained from the school records, whereas the physical activity program as suggested in the NEP2020 guidelines was implemented for the selected participants for two terms namely the Term 1 assessment and Term 2 assessment spanning six months. The records were made available at Aditya Vidyashram Residential School with prior permission with the consent of the concerned authorities. The collected data were classified and statistical analysis was done to find out the relationship. Analysis of the data was performed using the statistical software SPSS. The results of the study are given below.

T-test for sit and reach

Table 1: Shows the T-Test for Sit and Reach

	N	Mean	Standard Deviation	Standard Error Mean
Sit & Reach.T_1	10	3.1000	.87560	.27689
Sit & Reach.T_2	10	3.9000	.56765	.17951

	Test Value = 0					
	t	df	Sign. (2-tailed)	Mean Difference	95% Confidence Interval of the Diff	
					Lower	Upper
Sit & Reach.T_1	11.196	9	.000	3.10000	2.4736	3.7264
Sit & Reach.T_2	21.726	9	.000	3.90000	3.4939	4.3061

Interpretation

The results show that the Sit and Reach scores at both time points T_1 and T_2 are significantly greater than 0. Since T_2 has a higher mean score (3.90 vs. 3.10 at T_1), it suggests an improvement in flexibility over time. The strong statistical significance ($p<0.001$) and narrow confidence intervals indicate that these results are reliable.

T-test for push up

Table 2: Shows the T-Test for Push Up

One-Sample Statistics				
	N	Mean	Standard. Deviation	Std. Error Mean
Push up. T_1	10	5.0000	.81650	.25820
Push up. T_2	10	5.1000	.99443	.31447

One-Sample Test						
	Test Value = 0					
	t	df	Sign. (2-tailed)	Mean Diff	95% Confidence Interval of the Diff	
					Lower	Upper
Push Up. T_1	19.365	9	.000	5.00000	4.4159	5.5841
Push Up. T_2	16.218	9	.000	5.10000	4.3886	5.8114

The push-up scores at both T_1 and T_2 are significantly greater than 0, confirming that participants can complete push-ups. However, the increase from T_1 (5.00) to T_2 (5.10) is very small, suggesting minimal improvement in push-up performance. If an intervention was applied between T_1 and T_2 (e.g., a strength training program), the data suggests that it did not lead to a substantial increase in their strength. Further analysis (such as a paired-sample t-test) would be needed to determine whether the difference between T_1 and T_2 is statistically significant.

Correlations of Sit and Reach

Table 3: Correlations

		Sit & Reach.T_1	Sit &Reach.T_2
Sit &reach. T_1	Pearson Correlation	1	.693*
	Sign. (2-tailed)		.026
	N	10	10
Sit & Reach.T_2	Pearson Correlation	.693*	1
	Sign. (2-tailed)	.026	
	N	10	10
*. Correlation is significant at the 0.05 level (2-tailed).			

Interpretation

There is a moderate to strong, statistically significant positive correlation between Sit and Reach scores at T_1 and T_2. This suggests that individuals who performed well at T_1 also tended to perform well at T_2. The significant correlation implies that flexibility levels are somewhat stable over time, though other factors (such as training or interventions) could influence improvement.

Correlations of Push-up

Table 4: Correlations

		Push-ups. T_1	Push-ups. T_2
Push-ups. T_1	Pearson Correlation	1	.821**
	Sign. (2-tailed)		.004
	N	10	10
Push-ups.T_2	Pearson Correlation	.821**	1
	Sign. (2-tailed)	.004	
	N	10	10
**. Correlation is significant at the 0.01 level (2-tailed).			

Interpretation

There is a strong, statistically significant positive correlation between push-up scores at T_1 and T_2. This suggests that push-up performance is relatively stable over time, meaning individuals who were stronger at T_1 were also stronger at T_2. The stronger correlation (r = 0.821) compared to the sit-and-reach correlation (r = 0.693) suggests that push-up performance is even more consistent over time. However, this correlation does not indicate improvement—it only shows that scores at both time points are related.

T-test for Academic Performance

Table 5: Paired Samples Statistics

		Mean	N	Standard. Deviation	Standard. Error Mean
Pair 1	Term1.marks	72.4000	10	7.36659	2.32952
	Term2.marks	77.9000	10	6.93542	2.19317

Table 6: Paired Samples Correlations

		N	Correlation	Significance.
Pair 1	Term1.marks & Term2.marks	10	.973	.000

Table 7: Paired Samples Test

		Paired Differences					t	df	Sign. (2-tailed)
		Mean	Stand. Deviation	Stand. Error Mean	95% Confidence Interval of the Diff				
					Lower	Upper			
Pair 1	Term1.marks-Term2.marks	-5.50000	1.71594	.54263	-6.72751	-4.27249	-10.136	9	.000

Interpretation

The significant increase in academic marks from Term 1 to Term 2 suggests that there is an improvement in academic performance over time. While this result shows that students performed better in Term 2, it does not by itself confirm that the improvement is directly due to increased physical activity but we can say that the performance of the selected participants had markedly improved due to regular practice of physical activities as suggested in the NEP2020 guidelines.

Correlations

Table 8: Correlations

		Term 1. Marks	Term 2. Marks
Term1.marks	Pearson Correlation	1	.973**
	Sign. (2-tailed)		.000
	N	10	10
Term 2. marks	Pearson Correlation	.973**	1
	Sign. (2-tailed)	.000	
	N	10	10

**. Correlation is significant at the 0.01 level (2-tailed).

Interpretation

The results indicate that students who engaged in physical activity tended to perform consistently well in academics. When we look at the strong positive correlation between Term 1 and Term 2 marks (r = .973, $p < .01$), it suggests that those who maintained their involvement in physical

activities also maintained or even improved their academic performance over time. This supports the idea that regular physical activity may be associated with higher academic scores.

Statistical Techniques

The data collected from the Academic Assessment were treated statistically. To find out the relationship between Physical Fitness variables and Academic subject variables, Pearson Product-Moment Correlation (r) was applied. The calculated "r" was tested for significant differences at the 0.05 level.

Discussion

Implementation of NEP-2020 by the Government of India, which places good emphasis on Holistic Education including Physical Education by bringing Physical Education Mainstream as a compulsory subject. The main aim of this research is to find whether the students have improved in academics by adding physical activity to their daily routines. The research reveals a significant correlation between physical activity and improved academic performance. By incorporating physical activities between Term 1 and Term 2 exams, it was observed a notable enhancement in student performance during Term 2 compared to the Term 1 exam. This suggests that the infusion of physical activity has a favorable outcome on academic results, simultaneously the fitness level of students also improved.

Conclusion

The researchers followed the NEP protocol to find academic improvement by infusing the physical activity suggested by NEP 2020. The finding shows that there was a significant change in students' academics as well as individual fitness. For the betterment of students' improved academic performance, the National Education Policy protocol can also be implemented.

References

1. Gangopadhyay SR. Physical Education and Sports. Today & Tomorrow. New Delhi: Friends Publications (India); 1993, 2002.
2. University News: a weekly journal of higher education. New Delhi: Association of Indian Universities; 2012 Feb 1-7;78(05).
3. https://www.education.gov.in
4. https://en.wikipedia.org/wiki/national_edications_policy_2020
5. https://www.brainwonders.in/blog/national_education_policy_2023
6. https://pib.gov.in/pressRelease/frameage.aspx?PRID_1847066
7. https://byjus.com/free-ias-prep/national-policy-education
8. https://vikas_pedia.in/education/policies_and_schemes/national_education_policy_2020
9. https://idnecameareen.com/blog/national-education-policy-2023/
10. https://www.ojetin.org/view?paper=JETIR2207-478
11. https://theKashmirimages.com/2020/05/19/nep-2020-and-the-significance-of-physical-dentation/
12. https://m.timesofindia.com/sports/more-sports/other/new-education-policy-will-have-sports-as-part-of-curriculum-kinen-rijiju/amp_articles